IN THE CLAIMS:

1.   (previously presented) A method of managing utilization of an integrated circuit (IC) processor, comprising:

monitoring processor utilization by an adjustable software video encoder program running on a first thread, the adjustable video software encoder program having at least two different performance levels associated with a video quality of individual frames, wherein each performance level has a different associated IC processor utilization and said performance levels comprise video encoding levels corresponding to an encoder configuration;

selecting a performance level corresponding to a video encoding level to achieve a highest possible video quality while maintaining an idle thread utilization above a minimum threshold selected to permit another software program to load and execute; and

generating running estimates of processor utilization for previous instantiations of the adjustable software video encoder program to determine how much to adjust said performance levels.

2-6.   (cancelled)

7.   (currently amended) The method of claim 1, further comprising:

in a startup mode of operation, selecting a startup performance level of said adjustable software video encoder program to have the startup performance level with a processor utilization below a maximum IC processor utilization by a margin selected to accommodate differences in processor performance of at least two different types of IC processors.

8-12.   (cancelled)

13.   (original) The method of claim 1, further comprising:

in a startup mode of operation, selecting a minimum performance level as a starting performance level.

14.   (currently amended) A method of managing utilization of an integrated circuit (IC) processor, comprising:

monitoring processor utilization by an adjustable software video encoder program running on a first thread, the adjustable video software encoder program having at least two different performance levels associated with a video quality of individual frames, wherein each performance level has a different associated IC processor utilization and said performance levels comprise video encoding levels corresponding to an encoder configuration;

selecting a performance level corresponding to a video encoding level to achieve a highest possible video quality while maintaining an idle thread utilization above a minimum threshold selected to permit another software program to load and execute, and

in a startup mode of operation, selecting a startup performance level of said adjustable software video encoder program to have the startup performance level with a processor utilization below a maximum IC processor utilization by a margin selected to accommodate differences in processor performance of at least two different types of IC processors.

15.   (currently amended) A method of managing processor utilization in a video system, comprising:

providing a software video encoder having a plurality of encoding levels, each encoding level having a different associated processor utilization, where each encoding level corresponds to an encoder configuration affecting a video quality of individual frames;

monitoring processor utilization of said software video encoder and of idle thread utilization;

determining a greatest encoding level of said video encoder to maintain a minimum idle thread utilization above a minimum threshold selected to permit another software program to load and execute;

wherein said software video encoder automatically adjusts its encoding level to achieve the best video quality while maintaining idle thread utilization to permit said another software program to load and execute; and

generating running estimates of processor utilization for previous instantiations of the adjustable software video encoder program to determine how much to adjust said encoding levels[[;]].

16.   (currently amended) A method of managing processor utilization in a video system, comprising:

providing a software video encoder having a plurality of encoding levels, each encoding level having a different associated processor utilization, where each encoding level corresponds to an encoder configuration affecting a video quality of individual frames;

monitoring processor utilization of said software video encoder and of idle thread utilization;

determining a greatest encoding level of said software video encoder to maintain a minimum idle thread utilization above a minimum threshold selected to permit another software program to load and execute;

wherein said software video encoder automatically adjusts its encoding level to achieve the best video quality while maintaining idle thread utilization to permit said another software program to load and execute; and

in a startup mode of operation, selecting a startup encoding level of said adjustable software video encoder program to have the startup encoding level with a processor utilization below a maximum processor utilization by a margin selected to accommodate differences in processor performance of at least two different types of processors.

17-20. (cancelled)

21.   (currently amended) A computer readable medium having computer code comprising instructions selected to:

monitor processor utilization by an adjustable software video encoder program running on a first thread, the adjustable video encoder program having at least two different performance levels, wherein each said performance levels level comprise where each encoding levels level corresponding to corresponds to an encoder configuration related to video quality;

select a performance level to achieve a highest possible video quality of individual frames while maintaining an idle thread utilization above a minimum threshold selected to permit another software program to load and execute; and

generate running estimates of processor utilization for previous instantiations of the adjustable software video encoder program to determine how much to adjust said performance levels.

22.   (previously presented) A computer readable medium having computer code comprising instructions selected to:

monitor processor utilization of a video encoder and of idle thread utilization, the video encoder having a plurality of encoding levels, each encoding level having a different associated processor utilization, where each encoding level corresponds to an encoder configuration affecting a video quality of individual frames;

determine a greatest encoding level of the video encoder to maintain a minimum idle thread utilization to maintain an idle thread utilization above a minimum threshold selected to permit another program to load and execute;

adjusting the encoding level to achieve the best video quality of individual frames while maintaining idle thread utilization to permit said another software program to load and execute; and

generate running estimates of processor utilization for previous instantiations of the video encoder to determine how much to adjust said performance levels.

23.   (previously presented). The method of claim 1, wherein said encoding levels affect at least one of a noise reduction process, a prediction algorithm, a level of accuracy, a level of detail, a level of sophistication used in data analysis, a number of iterations used, error handling processes, and a size of a motions search.

24.   (previously presented) The method of claim 1, wherein said encoding levels correspond to decisions to select combinations of at least two of noise pre-processing, inverse telecine detection, high quality motion search, bidirectional motion search, half-pel motion vectors, full frame motion estimation, field frame discrete cosine transformation, and full precision mean absolute difference calculations.

25.   (previously presented). The method of claim 1, wherein said encoding levels affect at least one of a noise filtering process and image resolution.

26.   (previously presented). The method of claim 15, wherein said encoding levels affect at least one of a noise reduction process, a prediction algorithm, a level of accuracy, a level of detail, a level of sophistication used in data analysis, a number of iterations used, error handling processes, and a size of a motions search.

27.   (previously presented) The method of claim 15, wherein said encoding levels correspond to decisions to select combinations of at least two of noise pre-processing, inverse telecine detection, high quality motion search, bidirectional motion search, half-pel motion vectors, full frame motion estimation, field frame discrete cosine transformation, and full precision mean absolute difference calculations.

28.   (previously presented). The method of claim 15, wherein said encoding levels affect at least one of a noise filtering process and image resolution.

29.   (previously presented). The computer readable medium of claim 21, wherein said encoding levels affect at least one of a noise reduction process, a prediction algorithm, a level of accuracy, a level of detail, a level of sophistication used in data analysis, a number of iterations used, error handling processes, and a size of a motions search.

30.   (previously presented) The computer readable medium of claim 21, wherein said encoding levels correspond to decisions to select combinations of at least two of noise pre-processing, inverse telecine detection, high quality motion search, bidirectional motion search, half-pel motion vectors, full frame motion estimation, field frame discrete cosine transformation, and full precision mean absolute difference calculations.

31.   (previously presented). The computer readable medium of claim 21, wherein said encoding levels affect at least one of a noise filtering process and image resolution.

32.   (previously presented). The computer readable medium of claim 22, wherein said encoding levels affect at least one of a noise reduction process, a prediction algorithm, a level of accuracy, a level of detail, a level of sophistication used in data analysis, a number of iterations used, error handling processes, and a size of a motions search.

33.   (previously presented) The computer readable medium of claim 22, wherein said encoding levels correspond to decisions to select combinations of noise pre-processing, inverse telecine detection, high quality motion search, bidirectional motion search, half-pel motion vectors, full frame motion estimation, field frame discrete cosine transformation, and full precision mean absolute difference calculations.

34.   (previously presented). The computer readable medium of claim 22, wherein said encoding levels affect at least one of a noise filtering process and image resolution.

35.   (currently amended) A computer readable medium having computer code comprising instructions selected to:

monitor processor utilization by an adjustable software video encoder program running on a first thread, the adjustable software video encoder program having at least two different performance levels, wherein said performance levels comprise ~~each performance level where each~~ encoding ~~level~~ levels ~~corresponds~~ corresponding to an encoder configuration related to video quality;

select a performance level to achieve a highest possible video quality of individual frames while maintaining an idle thread utilization above a minimum threshold selected to permit another software program to load and execute; and

in a startup mode of operation, selecting a startup encoding level of said adjustable software video encoder program to have the startup encoding level with a processor utilization below a maximum processor utilization by a margin selected to accommodate differences in processor performance of at least two different types of processors.

36.   (currently amended) A computer readable medium having computer code comprising instructions selected to:

determine a greatest encoding level of a video encoder <u>having a plurality of encoding levels</u> to maintain a minimum idle thread utilization to maintain an idle thread utilization above a minimum threshold selected to permit another program to load and execute;

adjusting the encoding level to achieve the best video quality of individual frames while maintaining idle thread utilization to permit said another software program to load and execute; and

in a startup mode of operation, selecting a startup encoding level of said video encoder to have the startup encoding level with a processor utilization below a maximum processor utilization by a margin selected to accommodate differences in processor performance of at least two different types of processors.

37.   (previously presented). The method of claim 14, wherein said encoding levels affect at least one of a noise reduction process, a prediction algorithm, a level of accuracy, a level of detail, a level of sophistication used in data analysis, a number of iterations used, error handling processes, and a size of a motions search.

38.   (previously presented) The method of claim 14, wherein said encoding levels correspond to decisions to select combinations of at least two of noise pre-processing, inverse telecine detection, high quality motion search, bidirectional motion search, half-pel motion vectors, full frame motion estimation, field frame discrete cosine transformation, and full precision mean absolute difference calculations.

39.   (previously presented) The method of claim 14, wherein said encoding levels affect at least one of a noise filtering process and image resolution.

40.   (previously presented). The method of claim 16, wherein said encoding levels affect at least one of a noise reduction process, a prediction algorithm, a level of accuracy, a level of detail, a level of sophistication used in data analysis, a number of iterations used, error handling processes, and a size of a motions search.

41.   (previously presented) The method of claim 16, wherein said encoding levels correspond to decisions to select combinations of at least two of noise pre-processing, inverse telecine detection, high quality motion search, bidirectional motion search, half-pel motion vectors, full frame motion estimation, field frame discrete cosine transformation, and full precision mean absolute difference calculations.

42.   (previously presented) The method of claim 16, wherein said encoding levels affect at least one of a noise filtering process and image resolution.

43.   (previously presented). The computer readable medium of claim 35, wherein said encoding levels affect at least one of a noise reduction process, a prediction algorithm, a level of accuracy, a level of detail, a level of sophistication used in data analysis, a number of iterations used, error handling processes, and a size of a motions search.

44.   (previously presented) The computer readable medium of claim 35, wherein said encoding levels correspond to decisions to select combinations of at least two of noise pre-processing, inverse telecine detection, high quality motion search, bidirectional motion search, half-pel motion vectors, full frame motion estimation, field frame discrete cosine transformation, and full precision mean absolute difference calculations.

45.   (previously presented) The computer readable medium of claim 35, wherein said encoding levels affect at least one of a noise filtering process and image resolution.

46.   (previously presented). The computer readable medium of claim 36, wherein said encoding levels affect at least one of a noise reduction process, a prediction algorithm, a level of accuracy, a level of detail, a level of sophistication used in data analysis, a number of iterations used, error handling processes, and a size of a motions search.

47.   (previously presented) The computer readable medium of claim 36, wherein said encoding levels correspond to decisions to select combinations of at least two of noise pre-processing, inverse telecine detection, high quality motion search, bidirectional motion search,

half-pel motion vectors, full frame motion estimation, field frame discrete cosine transformation, and full precision mean absolute difference calculations.

48.   (previously presented) The computer readable medium of claim 36, wherein said encoding levels affect at least one of a noise filtering process and image resolution.